

Medicine 2.0: Reflections on a Pathology of Information Society *

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Abstract

The article analyzes the impact that digital communication and information technology (CIT) can have on medicine both as a science, and as a practice. The technological changes that lead to what I call 'Medicine 2.0' occur on several levels, such as: information overload, the physician-patient relationship, the self-perception of both physicians and patients, as well as the concept of the human body and what is understood as sickness and as health. With the purpose of defining a pathology of the information society, an anthropological framework is proposed based on concepts developed by Swiss physician and psychiatrist, Medard Boss, illustrating with a few examples a systematic analysis of said pathology. The article concludes by proposing guidelines for an ethical outline as a reference for preventive and therapeutic care in the information and knowledge society.

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Introduction

In this article it is my intention firstly: to give a brief description of the information and knowledge society, showing the impact that it can have in what we could call a 'Medicine 2.0'. Secondly: I present a possible anthropological – not anthropocentric – framework for the possible systematic elaboration of a pathology of the information society. This framework must be reviewed critically in relation to different cultures and forms of knowledge on healing and preventive arts, such as those from East Asia or the various African and Latin American cultures. It must also consider the need to 'enculturate' digital techniques in different societies, with the resulting changes to medical structures and services which, as we all hope, would have to improve, that is, adapt to the needs and expectations of what we nowadays loosely term (in the singular) information society.

In the past century, during the mid-1960s, the term *information overload* appeared in the context of civic communications (Levy 2008, Meier 1962). But it was the writer Alvin Toffler who used it in 1970 in the context of the information society (Toffler 1970). Toffler indicates that cognitive and perceptual processes are overloaded by technological advances that lead to a transformation of industrial society. This thesis is confirmed by current neuroscience, at least when it comes to the cognitive limitations of the brain (Klingberg 2009).

During the seventies the term "information explosion" was also being used in library sciences and in documentation in reference to the exponential growth of scientific publications. This was a problem that had already surfaced with the printing press in the sixteenth century, and then became more acute through the nineteenth century, when modern science first became an instrument essential to industrial development, as well as to political and military forces (Levy 2008, 505). Ortega y Gasset refers in several essays to the democratic transformation of modern society based on the printing press (Ortega 1962, 1965, 1976; Capurro 2002). The *impasse* caused by the information explosion leads us to find solutions based on the use of computer sciences, arriving early on, during the nineteen-seventies, at the creation of bibliographic databases and servers such as DIALOG, foreshadowing what one might refer to as 'the Google Society'. The term 'information ecology' appears in the eighties (Capurro 1990). At the start of the twenty-first century, new forms of digital social interaction accelerate information overload in every field on both a local and global scale. As of 2008 there is a research group known as "The Information Overload Research Group" (IORG 2008) "Reducing information pollution".

Just as industrial society once produced, and still produces, a series of pathological phenomena, the consequences of which we are still experiencing as social, economic, energy, and climate crises, so does the so-called information and knowledge society. This is the thesis that these notes lead to: that the so-called information and knowledge society gives rise to a pathology that I believe to be far from analyzed in a critical and systematic fashion on several levels, one of which is medicine.

It is a complex subject not only where it concerns the impact of CIT [ICT?] in medical research, but also in relationship to the changes in interaction between physician and patient. This is also true regarding both the terminology and the different ways in which knowledge, medications, and healing or prevention are exchanged and accessed – by patients and doctors – and their respective public health institutions, as well as by the authorities that shape the conversation on social justice within and amongst different societies in a digitally globalized world. We can expect that the social justice aspect of medicine in the information and knowledge society will become intensified within affluent and technologically advanced communities, as well as between such communities and other nations or regions of the world.

It is clear that a systematic study of the pathology(ies) of the information society(ies) cannot be limited to diagnosing the cause of certain phenomena such as the increasingly acute stress brought on by various forms of information overload. There is as well as the influence of the digital world both in daily life and in the workplace, which leads to different types of organic and psychological disturbances. This may lead to crises not only for companies, but in daily social interactions, as well as professional spheres, including the education system.

However, before starting this analysis I would like to share a personal experience. In the late nineties, my dependency on technology, or computer addiction, had spiked, particularly due to my international professional success. The degree of recognition I received exploded mostly due to my Web presence. In 1999 I created an international network on information ethics, which grew very rapidly. It got to the point that I would forget to eat and felt very nervous when I wasn't near my computer. In 2000 I was made a member of the European Group on Ethics in Science and New Technologies (EGE) of the European Commission. It was a great honor, but it also meant a lot of work since I had to commute to Brussels each month. Add to that the jealousy and resentment of colleagues, which pushed me to work even harder. My wife would say to me: "You are allowing yourself to be dragged along".

On the morning of April 8 in 2005, a few months before turning sixty, I took part in a public forum in Berlin entitled "Stem Cell Research – Roads and Actions in Europe" organized by the Max Delbrück Center for Molecular Medicine and the Friedrich Ebert Foundation, as part of an international congress on "Biopolitics and Regenerative Medicine". In the afternoon I took the train from Berlin to my home in Karlsruhe. I arrived home at around nine that night, very tired after several hours riding the train. Right away, I sat at my desk and started feverishly reading and answering my e-mails. At around ten that night my wife asked if I would like to watch the news on television. As I did so, I heard my heart beating loudly, an incessant 'thump-thump-thump'. I tried to calm myself and my wife. "It's just a little stress. It will pass." But it didn't go away; instead it continued through the night and for several weeks after, day and night. The next day I consulted my physician who couldn't diagnose any type of heart rhythm disorder or any other cause, so he suggested that I consult an otorhinolaryngologist (ENT). The

ENT told me it could be a virus. I felt intense stress and aches in my muscles, specifically in my shoulders, which is why I decided to consult an orthopedist. He told me the cause could be in the neck region and the spine. I had to wear a neck brace for several weeks. But this therapy didn't ease the pain or the relentless thumping of my heart resounding in my head. Naturally all of this took a toll not only on our private life, but also on my academic activities. I was halfway through the semester and needed to commute to Stuttgart several times a week. During class I would try to distract myself but it reached a point when I decided to interrupt my teaching and gave notice of my illness. I slept poorly and became increasingly nervous. A family friend recommended that I visit a chiropractor. He confirmed that my pelvis was displaced which compromised the spine and the neck muscles. With a *single* motion, he returned the pelvis to its normal position. The thumping of my heart ceased immediately. I breathed deeply. However, the thumping resumed shortly after. The muscles in my neck and back were very stiff and exerted pressure on the arteries. The chiropractor told me that this stiffening should be treated with physiotherapeutic methods. But he also told me the following: "Mr. Capurro, you are not ill. You just need to change your lifestyle." He was right. It is clear now that the real origin of my ailment was what we nowadays refer to as a *burnout*, formerly known as *surmenage*, that is, something caused by excessive work, and in our messaging society, by an *information overload*. I was completely exhausted.

A friend helped me calm down the next day, and I slowly started to stabilize. Conversations with a psychologist were also a little helpful. He suggested that I take a few weeks off. A family friend suggested I go to "Friedborn", a recuperation and recreation center in the south of the Black Forest, known in German as "Kurort", or in English as a "spa". When I arrived at noon on a hot August day, I was carrying with me a suitcase filled with books. The establishment's director said to me: "But I thought you were coming here to rest". The first few days were very tough. I had to fight the urge to read my e-mail. That is when I decided to rid myself of all contact with communication devices. I filled my days with long walks. The forest known as 'Hotzenwald' is a very beautiful region. 'Friedborn' is located some seven hundred meters above sea level, surrounded by forests, the ruins of a medieval castle, and the Murg Creek with its romantic path and many springs. The center also has a very healthy food offering consisting of vegetables, salads, tea and natural water, all of excellent quality. They also offer massages and several types of muscular therapy services. I was lucky to chat with a very caring doctor and she understood my problem. I started a journey towards becoming physically and spiritually restored. After three weeks I had made a full recovery. I had learned my lesson regarding one of the problems of the information society, the excess of information. But it was a while before I regained trust in my own body. The anxiety had deep roots in my bones. I changed my life and started taking daily walks in the woods without my cell phone, refusing professional invitations, and not reading my e-mails after eight at night. Whenever possible I now go to bed at 10 p.m. I put my personal life at center stage. Whenever I see symptoms of being "dragged along" I don't dismiss them. If possible I will go once a year to 'Friedborn'. I eat healthy and light food. My body and my spiritual life started

developing in an open and free manner. Now I can react calmly and with self-possession when faced with envious and resentful behavior, and other challenges from information society. To put it more broadly: we need to have – both individually and socially – an immune system that is adapted to the information society, or we won't be able to survive in it, much less attain a good life.

I. Medicine in the Information and Knowledge Society

Whilst it is true that all human society and all other living beings are in a constant exchange of energy-matter and information with their environment, it is clear that in the case of human beings, such exchange is also conducted through language with its syntactic, semantic, and pragmatic characteristics, which allow us a vast array of interpretations and actions, and these constitute the basis of what we understand as freedom. This realm of theoretical and practical potentials has been profoundly influenced by communication and information technology (CIT), particularly in the second half of the last century and up to the present day.

According to Michel Foucault one can distinguish four types of technologies or techniques:

- a) Technologies of production, which enable us to produce, transform, or manipulate things;
- b) Technologies of sign systems, which enable us to use signs, meanings, symbols, or signification;
- c) Technologies of power, which determine the conduct of individuals and submit them to certain ends or domination, an objectivizing of the subject;
- d) Lastly, technologies, or techniques, of the self, which enable individuals to effect by their own means or with the help of others a certain number of operations on their bodies and souls, thoughts, conduct, and way of being, so as to transform themselves to attain a certain state of happiness, purity, wisdom, perfection or immortality (Foucault 1988, p. 18).

In keeping with Foucault's line of thought, in the information society, the digital technologies for sign systems, or CIT, are closely linked to techniques of the self, just as other classical technologies for signs once were and still are, such as: spoken language, the written word, and print (Capurro, 1995, 2003). Such technologies have an increasingly profound influence both on techniques of power, as well as on production technology. Take for example the automotive industry, an exemplary case of this steadily advancing automatization process based on CIT in general and in robotics specifically. In other words: we live in a society whose horizon for self-understanding, and its capacity for knowledge, production, and action are basically subordinated to digital media. I call this possibility of self-understanding from and through CIT *digital ontology* (Capurro 2010, 2001, Eldred 2009/2011; Capurro et al. 2013) (1).

I.1 Characteristics of the information and knowledge society

The current information and knowledge society can be characterized from four perspectives that are paradoxical in and of themselves:

Information overload

The first characteristic we've already presented in the Introduction when we refer to *information overload*. I say this is a paradoxical characteristic because, strictly speaking, there can be no information overload, since information is always the product of a selection process guided by what we believe we need. The paradox lies in the fact that the potentially accessible information brings with it an increase in the number of options. Living in a society where potential information and possible selections are abundant creates a problem for us when it comes to criteria for veracity, relevance, and quality, for instance.

Interactivity

The second characteristic of the current information society is *interactivity*. It differentiates us especially from the information society created by the mass media with their hierarchical structure, which turns the subject into a receptive user. The interactivity, which has developed at breakneck speed since the appearance of the Internet with services such as the *World Wide Web*, electronic mail, blogs, Wikipedia and other instruments of digital socialization, is a clear example of the increase in possibilities for action and selection and therefore, of individual and collective freedom. But, paradoxically, some of these services are *frequently* hard to control, and susceptible to being reclaimed for all sorts of activities with potentially harmful or destructive intentions such as computer viruses or SPAM.

Self-definition

In the third place, the information society has opened a great field of possibilities for self-definition, individually and collectively, through digital media, more so than political, social, and cultural structures with their deep roots both in geographical locations and cultural traditions. These local circumstances have not disappeared, but are themselves undergoing a process of transformation, in many cases accelerated by various kinds of global interaction.

Material base

Finally, the information society defines itself based on a horizon of digitizability. However, one should be aware that the digital understanding of reality is not equal to reality itself or, to put it differently, digital culture in all its different shapes requires a specific *material base*. Its products – including the raw material itself and the production, use, and recycling processes – are necessarily linked to both biological and sociological processes, which often possess positive and negative characteristics, since they can be

extremely noxious to the environment and the health of those that seek to use CIT to improve their lives. The ecological debate over the materiality of the information society is highly topical due to the overproduction of electronic waste and its frequent exportation to developing countries (Faulhaber and Zehle 2009). This has consequences for the conception and health of the human body, as we shall immediately see. The paradox resides in the fact that, parallel to this, a sphere of digital interaction arises, apparently divorced from physical space-time reality. Let us remember the Declaration of the Independence of Cyberspace by John Perry Barlow in 1996 (Barlow 1996) – this sphere not only meets, but becomes a hybrid with the so-called real world, and ultimately, it has its origins in this real material world and has ecological repercussions with consequences that are often dire for human health and environmental protection.

I.2 Towards a transformation of medicine

We do not intend the above characteristics of the information society to be exhaustive, but it is clear that they imply a transformation of medicine as well. In a recent issue of the *International Review of Information Ethics* (IRIE), dedicated to CIT and medical ethics, Georg Marckmann, a researcher in the Department of Ethics in Medicine at the University of Tübingen, and Kenneth Goodman, Head of the Bioethics Program at the University of Miami, ask the following questions about the future of medicine in general, and about the physician-patient relationship in particular, against the horizon of digital culture:

- “What are appropriate uses of health information systems?
- Who should use these systems?
- What benefits and risks do these technologies have for patients?
- How does information technology change the physician-patient relationship?
- How does (and will) medical decision-making change?
- Perhaps most fundamentally: How does (and will) information technology transform the medical construction of the human body and of disease?” (Marckmann and Goodman, 2006, 3)

These questions define the field of what I refer to as 'Medicine 2.0', that is, a change of paradigm for medicine that encompasses its vision of the human body as an object of research, and the corresponding concepts of health and sickness. I will touch again on this subject in the second section. Let us stop briefly and reflect for a moment on some of the possible consequences of the information society as we have characterized it.

Information overload in medicine

In the first place, we have to consider the *information* overload that affects both physicians and patients and, naturally, medical research itself. Doctors and patients face the paradox of having an unbelievable amount of information available on a particular disease for instance, often without being able to discern and discriminate based on their quality and pertinence to the specific case. This can lead not only to the patient's disorientation, but also to a loss of the doctor's 'power', if the patient is well informed.

Something similar happens with the information overload in the medical practice and research. Let's consider, for instance 'evidence-based medicine' (EBM) which, in its tendency to base the relevance of information exclusively on empirical evidence, might miss information based on other theoretical paradigms. Information overload also has great influence on the teaching of medicine, both on students and professors, this being a situation that has become generalized in higher education. The pharmaceutical industry and its mediators, such as pharmacies and physicians themselves, are increasingly aware of the complex digital environment with its paradoxical abundance and need for selectivity. This situation inevitably influences both the physician's and the patient's decision-making process, something Marckmann and Goodman allude to.

The physician-patient relationship

Secondly, let's consider another aspect of *interactivity* which affects the physician-patient relationship directly, both in the private practice, as well as in hospitals. It's clear that 'digital natives', as those born within the interactive digital information society are known, can't fathom, for instance, a hospital that doesn't offer an interactive information system to the patient. The patient now sees himself as an agent too, meaning that he expects to be able to communicate interactively with the medical personnel, receive information on his/her condition, recovery process, etc. What one usually finds in the rooms nowadays is a television set. Additionally, patients are often asked to sign a written consent form, which is unrelated to what should be an interactive physician-patient relationship, which could offer the patient, for example, a selection of personalized information, relevant and of high quality, that the patient can choose to use, or not, exercising his/her right to know. Marckmann and Goodman rightly ask: What are appropriate uses of health information systems? Who should use these systems? What benefits and risks do these technologies have for patients?"

Privacy and Security

It is clear that these interactive processes are closely linked to the issue of privacy, something that concerns both the medical personnel and the institution involved. It is related with all aspects of the patient's security, referring to the malicious use of their personal data, ('security') – and when the data

are *inadvertently* used with poor consequences ('safety'). Lastly, one must keep in mind that interactive digital networks make new relationships possible among patients themselves, which are often an important form of social support that could paradoxically lead to more disorientation, as is the case when there are misunderstandings, or when seemingly sufficient information leads to practical, yet erroneous, conclusions.

I.3 Being a physician and a patient in the twenty-first century

The information society affects both the physician and the patient in their *self-definition* and self-understanding. We mentioned before that patients are also agents, that is, that they can and should see themselves as such in varying degrees and according to various situations. It is apparent that there are, so to speak, patients who are more or less passive or 'television-like', depending also on their interests, circumstances and options, the same way that there are physicians who prefer to keep their science to themselves and not share their knowledge interactively with the patient during the healing process, other than through a brief daily visit and the request for a signature for an Informed Consent Form in case of a serious event. That consent is an instrument which supports the doctor's power, or which often serves as a protection, so they can avoid discussing the case with patients, which requires time and patience.

Personalized medicine

Digital technology has been revolutionizing medical science for several years now both in the fields of diagnosis, and of healing methods. The tendency that we can foresee in relationship to, say, nano-medicine, is towards a personalized medicine in which the physician-patient relationship leans steadily more towards the patient's side. He/she then becomes an agent who is vested with an autonomy that can result paradoxically more in a problem than in an improvement, given that frequently, their capacity to interpret the data related to their case correctly is very limited (EGE 2007). Clearly, this development within medicine of the physician-patient relationship can also give rise to control systems based on CIT, which bring with them the (potential) loss of the patient's autonomy, as well as an information overload when the data are not sufficiently clear, especially when they have possible consequences for the patient/ agent (EGE 2005). This way we begin to answer Mackmann and Goodman's question: "How will information technology change the physician-patient relationship?" (and it will).

The human body from the digital perspective

Let's reflect finally on the influence that the information society has on the medical vision of the human body, and the concepts of health and sickness themselves. Under the premise of the digital ontology mentioned earlier, we only understand something to the same extent that we are able to observe it through the digital media. This means that the human body is essentially seen as a collection of data that can be

obtained, manipulated and controlled through digital methods, instruments, and networks. This has evident consequences for the medical relationship to the human body, which includes the need to legally protect those data by transforming the “corpus” in “Habeas Corpus” into “Habeas Data” (EGE 2005, 29). This digital vision of the human body also opens up possibilities for transforming it beyond medical treatments based on digital technologies, including several forms of hybridization of the corporeal and the digital, such as CIT implants (EGE 2005) and the possible ‘enhancements’ to faculties and/or physical processes of sensorial, cognitive, and emotional nature. The concepts of health and sickness are considered as information processes.

The body itself is no longer seen as something in need of being perfected within certain natural characteristics – which are, more or less, fixed – although there are variations relating to particular eras and cultures and their ‘ideals’ – and based on conventional procedures. It is rather seen as something to be designed with the precision allowed us by digital technology in conjunction with, for example, molecular biology, following particular interests, but having consequences also for future generations if it is the case that such transformations are hereditary. The current legal limits prohibiting changes to the human genome show us *ex negativo* the possible interactions amongst biological processes, individual and social options, and the advanced digital technology of the twenty-first century.

II. Notes on a pathology of the information and knowledge society

II.1 Phenomenology of human existence

From this technological perspective the human being is not seen as something fixed but as a yet-to-be-defined something from a horizon or definition that resists being identified as a permanent and absolute fundament or essence. It is undeniable that human existence manifests itself in a series of characteristics, which actually make openness and change possible, including variations in self-understanding and options. However, we must keep in mind how unforeseeable scientific and technological processes can be, which are no less unforeseeable than historical circumstances and cultural conditioning, all of which influence and even determine individual and collective singularities. Seen in this manner, the universal and the singular do not contradict each other, but it is precisely their tension which characterizes the history of human self-definition in its variety.

It is now my intention to propose a pathology of the information society from a phenomenology of human existence inspired by the work of Swiss psychiatrist Medard Boss (Boss 1975), who in turn developed a vision of medicine confronted with the industrial society and in dialogue with the philosophy of Martin Heidegger (Heidegger 1976). It is evident that such a vision needs to be revised in the frame of the information society. (2)

II.2 Sharing the world

The current information society makes it more apparent that human beings share a common world, which is currently globalized with its base in the digital network. This concept of sharing or *being-with-others*, classically referred to as intersubjectivity, has a long philosophical trajectory. But it is a phenomenology which has specially demonstrated that human society is not as Descartes – the father of modernity – thought: a sum of isolated individuals, originally encapsulated in their subjectivity, but rather, this subjectivity is inconceivable if it is not enabled through its *original* relationship to other human beings in a common world.

Under the title ‘phenomenology’ I refer to a group of authors and tendencies that originate particularly in the ideas of Edmund Husserl, but that have roots going as far back as Hegel. Phenomenology has demonstrated that aside from the original social interdependency, there is an interdependency with a shared world that is no less originary, and which is just as much a natural or ‘given’ world, as it is artificially created by men; they are both intimately linked. What is seemingly ‘given’ is always inserted in specific contexts and vital necessities.

It is evident that in the current information society, this being-with-others is profoundly influenced by interactive digital networks, as it once was by writing, the printing press, or mass media. Both normal and pathological social effects of this *being-with-others-on-the-Web* gradually start to manifest themselves, for instance, in the form of an *Internet addiction*, superficially considered a ‘mental disorder’, but which can also have organic manifestations. The digital network is presented as a space ruled by the moral imperative ‘share everything with everyone’ which can lead to exhibitionistic and voyeuristic behavior, thus perverting the positive potentials of interactive and autonomous communication, as is the case with diseases such as AIDS (Capurro 2009).

II.3 Living in space and time

Human existence is also marked by a peculiar relationship to space and time. Our being *in-space-and-time* is such that we can be with other people or remote entities without being in physical proximity. (3) We live in a three-dimensional temporality of past, present, and future, which is different from the linear temporality in which the different instances of the *now* are identical with each other, and where the past does not exist (anymore), and the future does not exist (yet) either. What is peculiar about human temporal existence – even if it is also the case for other animals in varying degree, largely due to their lack of symbolic capabilities – is precisely that *having been* is somehow *being* (through language) and so, too, is what *could be*. (4) The future allows us to have *time for* something, for instance, that is: we give time a

meaning. Human temporality has a certain extension, as it does, for instance, when we say that we have some time to be with friends in the afternoon.

It is apparent that the information society, and specially the space-time dislocation that we are afforded by instruments such as our cell phone with Internet capabilities, has a profound influence on this characteristic of human existence. Perhaps one of the most widely discussed pathological phenomena in this field is the *attention deficit* or hyperactivity, which can be caused by many things, organic as well, but which are accentuated in many cases, especially in children and teenagers, by a peculiar form of digital communication overload that can lead to psychic and organic disorders.

II.4 Memory and history

The power to relate to what has been is what we ordinarily refer to as *memory*, which is the base of human historicity, that is, the possibility of transforming our existence individually and collectively. The information society puts at our disposal virtually limitless means of storing, processing, distributing and recovering information whose characteristics I have examined in the first section. Just as is the case with other extracorporeal media for our memory, they presuppose the capacity to remember and select, which is often disturbed by what we refer to as informational overload. At the same time, global access to sources of information and interactivity has fundamentally changed the possibilities of memory and historicity as long as such access is possible given all its conditions: technical, economical, political, cultural, etc. I am referring to the problem of the 'digital divide' which constitutes one of the great challenges of the recently inaugurated century, particularly if we think of it in relation to other divides, namely in: nutrition, education, and health. The digital divide can have pathological consequences of various kinds and caliber, such as the exclusion from socialization processes both in an individual's private life, his/her education, in the economy, and politics. This can occur both in societies where CIT are part of the normal living standard, and in digitally marginalized societies. The Medicine 2.0 must be aware of this problem and conduct local and global studies into the matter.

II.5 Human corporeity

The two dimensions of spatiality and temporality have a determining weight in the experience of *human corporeity*. In German there are two words for the concept of body: 'K rper', which designates something inanimate, and 'Leib', which designates the animated body. The animated human body ('Leib'), and in varying degrees any other living body, possesses the virtue of being able to extend in a somewhat broad manner, on a case-by-case basis, within the spatial-temporal realm, unyielding to the physical space they occupy ('K rper'). "The limits of my bodily existence are", according to Boss, "identical to those of my world-openness." (Boss 1975, 278) According to Boss, *stress* is a form of hypertension or overload, of existential possibilities that can lead to several forms of depression, for instance (Boss 1975, 455-461).

An ongoing study into demographic change and medical prevention in the realm of CIT, sponsored by the Federal Ministry of Education and Research in Germany, and by the European Social Fund (EFS) in the context of their program on the “capacity for innovation in the modern workplace”, (DIWA-IT 2009) shows that a great number of the young people polled cannot imagine working exposed to permanent stress until their retirement. It leads not only to fatigue at the end of the day, but also to a gradual loss of self-control in a system where the pressure to reach imposed goals is compounded by being digitally connected to their companies twenty-four hours a day, seven days a week, following the formula 7x24. Digital communication forces them to react immediately to all sorts of questions and requests for information, and to a work system based on control. This is an extreme form of information overload, including an “over-control”, which leads to a loss of self-reliance when such “over-control” turns counterproductive by simulating something that doesn’t really happen (Holzapfel 2009). Recent suicides in French industry are a clear and tragic sign of this situation.

The vision of the human body that I referred to in the first section, as a collection of data susceptible of being digitized, is evidently reductionist, which implies consequences both for the self-perception of disturbances or discomfort by the patient –who is now also an agent – and for the perception of the physician who treats the patient or interacts with him/her. On a daily basis, Web-users can suffer many types of organic problems that originate from their Internet dependency, ranging from the lack of motion, with consequences ranging from muscle stiffening, to a physical-psychological ostracism within a medium that paradoxically allows us a global exchange and (in most cases) is not censored. An example of this sort of confinement can be found in the film by Austrian director Michael Haneke “Benny’s Video” (Capurro 1995).

Within this context, it is also very important to note the consequences for the ecology and health of thousands of people, especially in developing countries which have become the destination for waste of an extremely toxic nature in the form of digital products such as radios, television sets, laptops, cell phones, or iPods (Faulhaber and Zehle 2009). Each physical lesion will always translate into a disturbance of *our relationship to others in a shared world*. Every physical ailment is linked to that common existence and makes our ‘susceptibility-to-harm’ manifest, as well as our ethical-medical responsibility for the other. The study of information society’s pathology has to analyze in detail the various forms of physical disorders, which may be indistinguishable from those caused by industrial society, but whose specific cause may be derived from CIT and their insertion in our society and ecology.

Medicine with a holistic view of the human body (‘Leib’) in the information society, should not forget that physical pain is closely related to ‘ailments of the spirit’ (sadness, anxiety, etc). Human existence is characterized by being always in some ‘*emotional state*’ or other or experiencing a feeling; these *moods* are not merely subjective, but allow us to experience ourselves, others, and our shared world from various

perspectives and dimensions. Often, a great love or a great hate, won't necessarily sequester us, or blind us, but will rather reveal something to us very clearly. In these moods we are more 'inside ourselves' than is the case with rage, for example, which will lead us to be 'out of our minds' – and our selves for that matter.

II.6 Feelings

Other feelings -such as anxiety- open us up to other dimensions of being-in-the-world, when we experience a loss of grounding in matters of the world, and are offered a glimpse into that in which our existence is paradoxically rooted. Discovering and accepting our own mortality does not necessarily lead to a tragic vision of life. The information society makes manifest, or communicates, *the death of others* as it happens in extreme cases of suffering and the struggle for justice, creating new forms for movements of social and political liberation, but at the same time, it provides new opportunities for reinforcing oppression, control, and censorship. Positive and pathological phenomena related to feelings in information society are both multiple and take on different shapes, from autonomous and interactive communication, to situations of dependency, bullying, self-destruction, voyeurism or exhibitionism that I have previously mentioned.

These dimensions of human existence have to be seen as the original components in the context and support of human freedom, the later being defined as the capacity to opt for diverse forms of existence, without such freedom being absolute or equal for all at all times. In other words, a systematic reflection on the pathology of the information society must take into account the various modalities upon which individual and social freedoms are built in a digital environment. A therapeutic vision cannot be limited to healing symptoms; it needs to research the complex interweaving of society, the world and (digital) technology. Moreover, it must consider technological conditions keeping in mind the various ecological, cultural, political contexts.

Conclusion

Not just science, but also medical practice, will continue to change deeply within the frame of an information society, which necessitates a careful revision process for methods and concepts, as well as for the structure of research institutions and medical practice, the industrial processes derived from these, the physician-patient relationship, the self-understanding of both, our view of therapy and preventive medicine, of what can be understood in the future as sickness or health, and for humans' capacity to shape themselves in all their psychophysical complexity. Medicine as a science and as a therapeutic technique becomes part of the relationship between man, the world, and digital technology; this makes philosophical reflection on such a relationship necessary in quest of a pathology, ethics, and therapeutics of the medical field.

This brief exposition on the digital conditions of medicine and its possible consequences for an analysis of information society's pathology, makes manifest the need for ethical reflection. Evidently, faced with the dynamics of social transformation and scientific and technological advances, ethical reflection beginning with principles such as the protection of human dignity, autonomy, privacy, the natural environment, the freedom of research, freedom of communication, etc, is forced into a constant effort of reinterpretation of such principles and the underlying values, and possible ways to prioritize them using various ethical criteria such as the utilitarian or deontological as a basis.

It is also apparent that such ethical reflection must occur on several levels, such as the academics; or in ethical groups integrated into political or professional institutions, such as research institutes and hospitals; and of course in our daily private lives, using the very media that bring about the pathological symptoms we have just uncovered. This reflection is also necessary for therapies and preventive practices that try to see beyond the symptoms, seeking out options for a sustainable information society, that is, one not opposed to the natural processes that ultimately make the life of humans and other forms on this planet, possible.

Finally, ethical reflection on the information society must remain critical vis-à-vis '*hype*' that inevitably appears when a discovery or an invention seems to open up the *via regia*, for example to beat cancer, or Alzheimer's, or AIDS. It is also important for ethical reflection to take place as early as elementary school, with the necessary pedagogical adjustments, so that generations of young people will learn to not be overwhelmed by information overload and the various options that pervert the sense of a life both personalized and in relationship with others in a shared world. This is the sense of the ancient '*techne tou biou*' taken up by Michel Foucault with the concept of "technologies or techniques of the self" (Foucault 1988), which we should revisit in the context of the information society (Capurro 1995). If – as Ortega writes – to be in the world of men is "inextricable from his desire to live well", then it is technology that allows us to think of life as well-being (Ortega 1965, 26), and we should ask ourselves to what degree digital technology helps us, or wears us down physically, in the effort to attain a good life.

On the other hand, ethics must abstain from doling out recipes for happiness, something undertaken by countless publications in what can be termed the *wellness* industry. It is the purpose of ethics to invite critical reflection on various options, leaving free choice both in civil society and in the political field up to the individual. This invitation to freedom is the basis for a medical and psychotherapeutic ethics according to Medard Boss who, referring to Martin Heidegger, distinguishes between a "care for the other" ("*Fürsorge*") from one pole in which such "care" tends to take the place of the other, to the other pole that opens up a path for the other to care for him or herself (Boss 1977, 31-32; Heidegger 1976, 122).

From this perspective one can say that twentieth century mass-media society tended to take away the other's freedom, whereas the information society of the twenty-first century aims – or should aim – at the

opposite. Not only does Medicine 2.0 find itself in the midst of this tension, but so does an analysis of the pathology of the information society itself. They must both consider that in a globalized world it is fundamental to have an intercultural dialogue on values and ethical principles, on the various ways in which medicine understands itself, and on how information societies are based on diverse traditions and historical singularities. What ties us together, or should tie us together, both in theory and practice are, without doubt, the United Nations' (UN) "Millennium Development Goals" as well as: the "Declaration of Principles" and the "Plan of Action" of the "World Summit on Information Society" (WSIS). These objectives and principles show without doubt the opposite of a pathology of the information society without being homogenizing, ideological, or Utopian. They are simply human.

Notes

(1) Said term must not be confused with the metaphysical thesis that proposes that the being of things, and not only the possibility of understanding them, has a digital nature, which could also be termed digital Pythagoreanism. (Capurro 2008, 2006, Capurro et al. 2013). Furthermore, the absolutization of the digital ontological project in the form of digital metaphysics can lead to 'cybergnosis', that is, pseudo-religious ways of understanding cyberspace.

(2) Both the structure and the categories that I will use, such as "being-with-others" or "being-in-space", are Heideggerian, having been used by Boss as a foundation for medicine. For a more detailed exposition of these philosophical fundamentals see (Capurro 2000).

(3) As indicated by Boss (1975, 285-290) it's not a matter of our needing an intrapsychic copy of them, since our psyche is not isolated and separated from the world and others. Human existence is not 'being within' a 'capsule psyche' to 'come out of'; it is always already a 'being outside' with others, sharing a world.

(4) This has been a theme, for instance, in Book XI of Saint Augustine's *Confessions*.

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